UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/375,331	08/17/1999	DAVID ZERYCK	1956/116	4894

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EXAMINER
HOANG, PHUONG N

ART UNIT	PAPER NUMBER
2126	

DATE MAILED: 01/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 October 2003*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *27 - 41* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *27 - 41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4)☐ Interview Summary (PTO-413) Paper No(s). _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: .

DETAILED ACTION

1.   This Office Action is in response to the Request for RCE filed on October 20,

2003. Claims 1 – 26 are canceled. Claims 27 – 41 are pending for examination.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   **Claims 27, 33, 34, 37, 39 – 41 are rejected under 35 U.S.C. 103(a) as being**

unpatentable over Hyder, US patent no. 6,233,624 in view of Williams, US patent

no. 5,659,685.

      As to claim 27, 37, Hyder teaches

      Suspending I/O operations for the layered stack (intercept of hardware interrupts,

col. 6 lines 50 – 52);

      Binding the device driver to the lower driver to form a layered device (bindings,

col. 9 lines 1 – 25);

      Binding the upper driver to the layered device (bindings, col. 9 lines 1 – 25).

      However, Hyder teaches inserting and removing link layer drivers (inserting or

removing link layer intermediate drivers, col. 8 lines 48 – 60) that would involve binding

and unbinding in the process of inserting and removing drivers.

Hyder does not explicitly cite dynamically adding a device driver into a layered stack of device driver, unbinding an upper driver in the stack from a lower driver in the stack; restarting I/O operations for the layered stack.

Williams teaches:

dynamically (dynamically, col. 3 lines 18 – 20) adding a device driver;

unbinding a driver (unbining a driver, col. 9 lines 20 – 25);

restarting I/O operations (play, col. 7 lines 27 – 30).

It would have been obvious to apply the teaching of Williams to Hyder's system because it keeps the system running after configuring drivers.

As to claim 33, 39, Hyder teaches the layered stack is an input/output stack (stack, col. 2 lines 62 - col. 3 line 59).

As to claim 34, Hyder teaches

registering a device driver (link layer driver, col. 3 lines 52 – 59) with an operating system (operating system component such as a registry, col. 8 line 61 – col. 9 line 7); and

registering the device driver with the layered device driver registration system (fig. 5 elements 304/372; col. 10 line 51 – col. 11 line 1).

As to claim 40, 41, these are the product claims of claim 27. See the rejection of claim 27 above.

4.   **Claims 35, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable
over Hyder, US patent no. 6,233,624 in view of Williams, US patent no. 5,659,685,
in view of Garney, US patent no. 5,412,798.**

As to claim 35, 36, Hyder teaches adding the device driver to the driver list
(each driver registers .... Upon loading various drivers, col. 7 lines 15 – 20), specifying a
relative position for the device driver within a device driver stack (providing information
necessary to set up dependency relationship among the desired drivers in the
hierarchy, col. 8 lines 66 – 67).

Hyder and William do not teach driver name, first and second key.

Garney teaches driver name (driver name 419, col. 9 lines 46 – 57), first and
second key (device driver identification, col. 9 lines 46 – 57).

It would have been obvious to apply the teaching of Garney to Hyder and
William's system because it can be identified one with different drivers.

5.   **Claims 28 – 32, 38 are rejected under 35 U.S.C. 103(a) as being
unpatentable over Hyder, US patent no. 6,233,624 in view of Williams, US patent
no. 5,659,685, and further in view of the applicant admitted prior art (APA) pages 1
– 2, and further in view of Garney, US patent no. 5,412,798.**

As to claim 28, Hyder and Williams do not teach the lower driver emulates a
device, the device having the first device name.

The APA teaches the lower driver emulates (each LDD emulates a device, page 2 lines 1 – 5) a device.

Hyder, Williams, and the APA does not explicitly teach the device having the first device name.

Garney teaches the device having the first device name (driver name 419, col. 9 lines 46 – 57).

It would have been obvious to apply the teaching of Garney and the APA to Hyder and William's system because layered drivers need to communicate to each other during the process of inserting or removing drivers and identified by the name.

As to claim 29, Hyder modified by Garney teaches the first device name and the second device name are unique to a particular stage or all stages of re-layering (each device has a name, col. 9 lines 46 – 57).

As to claim 30, Hyder teaches exporting the layered device under the second device name for use in a layered stack (export library, col. 7 lines 1 – 9).

As to claim 31, 32, Hyder modified by Garney teaches the first device name and the second device name are unique to a particular stage of re-layering (each device has a name, col. 9 lines 46 – 57).

As to claim 38, see claim 28 and 30 above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong N. Hoang whose telephone number is (703) 605-4239. The examiner can normally be reached on Monday - Friday 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703)305-9678. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)746-7140.

Ph

January 5, 2004

MENG-AI T. AN
SUPERVISORY PATENT EXAMINER
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